



Solving an integrated Job-Shop problem with human resource constraints

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Auteur	Guyon, Olivier [1], Lemaire, Pierre [2], Pinson, Eric [3], Rivreau, David [4]
Pays	France
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Résumé en anglais	<p>This paper investigates the integration of the employee timetabling and production scheduling problems. At the first level, we have to manage a classical employee timetabling problem. At the second level, we aim at supplying a feasible production schedule for a job-shop scheduling problem (NP-hard problem). Instead of using a hierarchical approach as in the current practice, we here integrate the two decision stages and propose two exact methods for solving the resulting problem. The former is similar to the cut generation algorithm proposed in Guyon et. al. 2010) for a problem integrating a classical employee timetabling problem and a polynomially solvable production scheduling problem. The latter is based on a Branch-And-Cut process that exploits the same feasibility cuts than the first approach. Preliminary experimental results on instances proposed in (Artigues et al. 2009) reveal a real interest for the approaches described here.</p>
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